CITY OF SCOTTSDALE
PLANNING & DEVELOPMENT SERVICES DEPARTMENT

INTERPRETATIONS & APPLICATIONS OF BUILDING CODES & REGULATIONS #88-6

CODE SECTION : UPC 1211.3

REV. 3/2/04

SUBJECT : NATURAL GAS PIPING UNDER CONCRETE SLABS IN RESIDENCES

The Uniform Plumbing Code, Section 1211.3 amended

"1211.3 No gas piping shall be installed in or on the ground under any building or structure and all exposed gas piping shall be kept at least six (6) inches (152.4 mm) above grade or structure. The term "building or structure" shall include structures such as porches and steps, whether covered or uncovered, breezeways, roofed porte-cocheres, roofed patios, carports, covered walks, covered driveways, and similar structures or appurtenances.

"Concealed unprotected gas piping may be installed above grade in approved recesses or channels".

"Exception: When necessary due to structural space configurations, such as island fixtures or covered patios, approved type piping may be installed under the slab of a structure when installed in a gas tight sleeve and vented to the exterior of the structure. The sleeve shall be of rigid plastic (SCH. 40 min.) with a diameter at least 2 pipe sizes larger than the gas piping. The sleeve shall be completely sealed on each end by the use of gas-tight couplings. The exterior end of the sleeve shall be provided with a minimum 1-inch (25.4 mm) exterior vent opening, terminating from a vertical arm and facing downward a minimum of 18 inches(457 mm) above finished grade. The sleeve and gas piping shall be secured in a stable position and air pressure tested separately and independently in accordance with this code. There shall be no horizontal branches installed below the floor and not more than one penetration of the interior floor. The slab penetration of the sleeve and encased piping within the building shall be accessible."

Where necessary due to structural conditions, the UPC permits the local jurisdiction to approve alternate locations. Where island appliance configurations occur, the City of Scottsdale will allow natural gas piping under concrete slabs with the following provisions:

A. (see attached illustration)

1) The gas piping shall be of metallic material (coated or uncoated) per UPC Section 1210.

2) The gas piping shall be encased in a rigid plastic (schedule 40 min.) sleeve with a diameter at least two (2) pipe sizes larger than the gas piping.

3) The sleeves shall be completely sealed on each end by the use of gas-tight couplings. The exterior end of the sleeve shall be provided with a minimum 1 inch exterior vent opening, terminating from a vertical arm and facing downward a minimum of 18 inches above finished grade.

4) The sleeve and gas piping shall be secured in a stable position and air pressure tested separately and independently in accordance with the UPC.

5) There shall be no horizontal branches or change in direction installed below the floor, and not more than one penetration of the interior floor shall be permitted. Where the sleeve and encased pipe terminates within a building, it shall be accessible.

6) Details of the installation shall appear on the City reviewed plans of the project.

7) **LP gas lines shall not be permitted below slabs.**

B. (see attached illustration)

1) The gas piping shall be of listed corrugated stainless steel tubing.

2) The gas piping shall be encased in a rigid plastic (schedule 40 min.) sleeve with a diameter at least two (2) pipe sizes larger than the gas piping.

3) The sleeves shall have minimum radius six inch sweeps on each end.

4) The sleeve and gas piping shall be secured in a stable position and air pressure tested separately and independently in accordance with the UPC.

5) There shall be no horizontal branches or change in direction installed below the floor, and not more than one penetration of the interior floor shall be permitted. Where the sleeve and encased pipe terminates within a building, it shall be accessible.

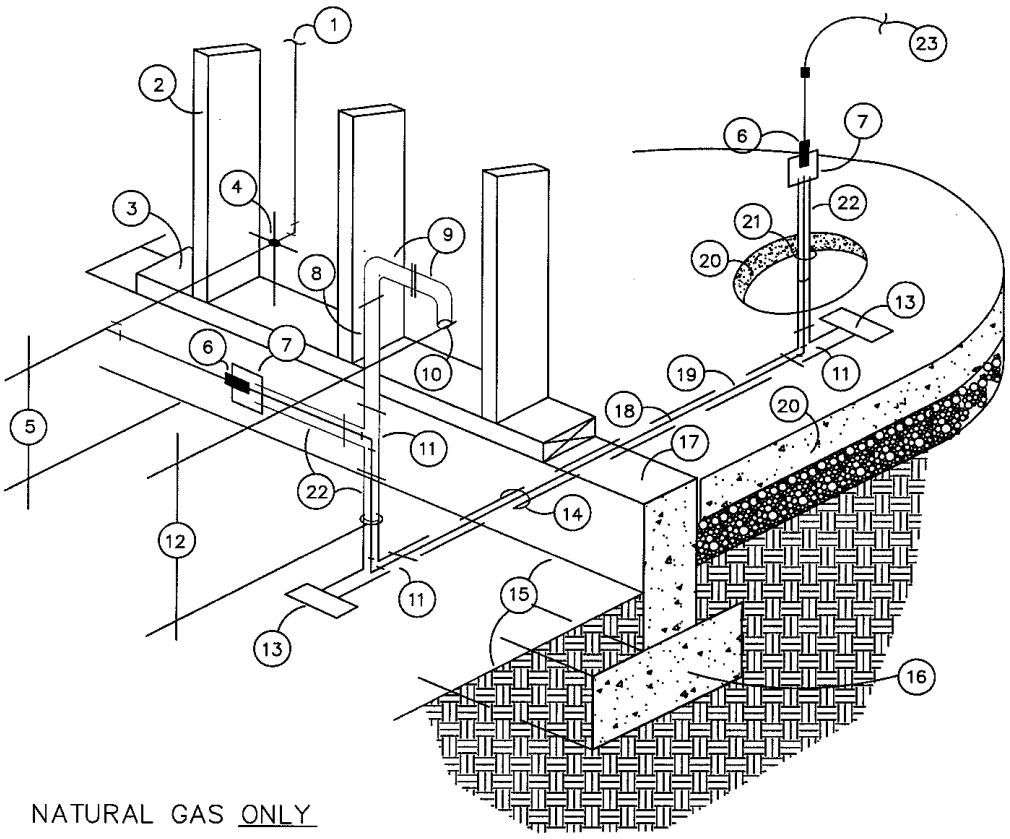
6) Details of the installation shall appear on the City reviewed plans of the project.

7) **LP gas lines shall not be permitted below slabs.**

A. Steel Pipe

RESIDENTIAL KITCHEN ISLAND COOKING COUNTER

UNDERSLAB VENTED GAS PIPING SLEEVE INSTALLATION.



NATURAL GAS ONLY

1. GAS PIPING IN EXTERIOR WALL CAVITY FROM ATTIC SPACE
2. EXTERIOR WALL STUDS
3. TREATED BASE PLATE
4. CAULK GAS PIPE PENETRATION THROUGH EXTERIOR WALL FINISH MATERIAL.
5. 8" MINIMUM HEIGHT FROM FINISH GRADE TO THE EXTERIOR WALL PENETRATION.
6. STEEL WELL CASING ADAPTER. WELD BOTH ENDS OF ADAPTER TO GAS PIPING. OMIT WITH SMALLER BAND-SEAL COUPLINGS.
7. PLASTIC TO STEEL BAND-SEAL COUPLING.
8. PLASTIC (SCHD.40 MIN.) VENT PIPING (1" MINIMUM VENT OPENING)
9. PLASTIC 90 DEGREE ELBOW.
10. OPEN VENT.
11. PLASTIC "T" COUPLING
12. 18" MINIMUM HEIGHT FROM FINISH GRADE TO VENT OPENING.
13. PLASTIC ENDCAP OR PLUG.
14. CAULK PLASTIC SLEEVE PENETRATION THROUGH CONCRETE STEM WALL.
15. FINISH GRADE
16. CONCRETE FOOTING
17. CONCRETE STEM WALL
18. GAS PIPING SLEEVED UNDER SLAB TO KITCHEN COOK ISLAND.
19. PLASTIC (SCHD.40 MIN.) VENT SLEEVE UNDER SLAB TO KITCHEN COOK ISLAND MIN. TWO PIPE SIZE LARGER THAN GAS PIPING.
20. CONCRETE FLOOR SLAB.
21. CAULK PLASTIC SLEEVE PENETRATION THROUGH CONCRETE FLOOR SLAB.
22. PLASTIC (SCHD.40 MIN.) VENT SLEEVE MIN. TWO PIPE SIZE LARGER THAN GAS PIPING.
23. ACCESSIBLE CONNECTION TO KITCHEN ISLAND COOKING APPLIANCE(S)

B. CSST Tubing